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## **WHAT IS CLAIMED IS:**

1. A monoclonal antibody that specifically binds to an isolated A-type substance obtainable from human liver or placenta, wherein the substance is a cyclitol-containing carbohydrate comprising a Zn<sup>2+</sup> ion and has the biological activity of regulating lipogenic activity and inhibiting cAMP dependent protein kinase.

- 2. The monoclonal antibody of claim 1 wherein the substance comprises phosphate.
  - 3. A hybridoma producing the monoclonal antibody of claim 1.
- 4. A pharmaceutical composition comprising the monoclonal antibody of claim 1 in combination with a pharmaceutically acceptable carrier.
- 5. The monoclonal antibody of claim 1, wherein the monoclonal antibody is an antagonist having the property of:
  - a) inhibiting the release of the A-type substance;
- b) binding to the A-type substance and thereby reducing its level; and/or
  - c) reducing a biological activity of the A-type substance.
- 6. The monoclonal antibody of claim 1, wherein the monoclonal antibody is linked, directly or indirectly, to a label.
- 7. The monoclonal antibody of claim 1, wherein the monoclonal antibody is immobilized on a solid phase.
  - 8. An immunoassay method comprising:
  - a) contacting a biological sample with the monoclonal antibody of claim 1 under suitable conditions for specific binding of the monoclonal antibody to A-type substance present in the sample, if any; and
  - b) determining whether the monoclonal antibody binds specifically to the sample.

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- 9. The immunoassay method of claim 8, additionally comprising measuring the amount of specific binding as an indication of the concentration of the A-type substance in the sample.
- 10. The immunoassay method of claim 9, additionally comprising determining the concentration of one or more P-type inositolphosphoglycans (IPGs) and then determining the ratio of the concentration of P-type IPG(s) to the concentration of the A-type substance determined in the immunoassay method.
  - 11. A monoclonal antibody that specifically binds to a A-type cyclitol-containing carbohydrate substance comprising a Zn<sup>2+</sup> ion, wherein the substance has the biological activity of regulating lipogenic activity and inhibiting cAMP dependent protein kinase and:
  - (a) a molecular weight determined using negative mode MALDI mass spectroscopy as shown in tables 3 and 4, or a molecular weight related to one of the molecular weights set out in tables 3 and 4 by the addition or subtraction of one or more structure units of about 211 m/z; or,
  - (b) a molecular weight determined using positive mode MALDI mass spectroscopy as shown in table 5, or a molecular weight related to one of the molecular weights set out in table 5 by the addition or subtraction of one or more structure units of about 211m/z.
  - 12. The monoclonal antibody of claim 11 wherein the substance comprises phosphate.
    - 13. A hybridoma producing the monoclonal antibody of claim 11.
- 14. A pharmaceutical composition comprising the monoclonal antibody of claim 11 in combination with a pharmaceutically acceptable carrier.
  - 15. The monoclonal antibody of claim 11, wherein the monoclonal antibody is an antagonist having the property of:
    - a) inhibiting the release of the A-type substance;

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- b) binding to the A-type substance and thereby reducing its level; and/or
  - c) reducing a biological activity of the A-type substance.
- 16. The monoclonal antibody of claim 11, wherein the monoclonal antibody is linked, directly or indirectly, to a label.
- 17. The monoclonal antibody of claim 11, wherein the monoclonal antibody is immobilized on a solid phase.
  - 18. An immunoassay method comprising:
- a) contacting a biological sample with the monoclonal antibody of claim 11 under suitable conditions for specific binding of the monoclonal antibody to A-type substance present in the sample, if any; and
- b) determining whether the monoclonal antibody binds specifically to the sample.
- 19. The immunoassay method of claim 18, additionally comprising measuring the amount of specific binding as an indication of the concentration of the A-type substance in the sample.
- 20. The immunoassay method of claim 19, additionally comprising determining the concentration of one or more P-type inositolphosphoglycans (IPGs) and then determining the ratio of the concentration of P-type IPG(s) to the concentration of the A-type substance determined in the immunoassay method.